SAR DATA CONVERTER WITH UNEQUAL CLOCK PULSES FOR MSBS TO ALLOW FOR SETTLING

ABSTRACT OF THE DISCLOSURE

Open loop common mode driver for switched capacitor input to SAR. A method for selectively switching capacitors in a SAR capacitor array that have a common plate thereof interfaced to the input of a comparator. The method includes the step of first initiating a SAR compare cycle. Then. the other plates the capacitors switched such that they are disposed at either a first capacitor reference voltage or a second capacitor reference voltage in a combination and sequence of switching operations defined by a successive approximation search algorithm. Each switching operation in the sequence requires, after the step of switching, a comparison of the voltage input to the comparator with a compare reference voltage after a predetermined settling time from the time the capacitor combination for the switching operation has been switched. The duration of the settling time is controlled for each of the switching operations in the sequence such that at least two of the durations are different.

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